COURSE SYLLABUS – ST 502

Lecture: MWF 9:30-10:20AM; Architecture Hall 160 and also on Zoom through Canvas.
Instructor: Tim Skalland **Email**: tskallan@uw.edu

Office: Padelford C-329. Use mailbox in Stats Department or email me.
Instructor Office Hours: Wednesdays 10:30AM-12:30PM in Padelford Hall C-302 (**not my office**)
Thursdays 2:00PM-3:00PM on Zoom only (link on Canvas)
Also, feel free to use the Discussion Board on Canvas for questions.
These office hours may change if I need to accommodate more students.

Teaching Assistant: Andrea Boskovic abosko26@uw.edu
TA Office Hour: Wednesdays 4:00PM-5:00PM on Zoom only (link on Canvas)

Lab Session: Friday 1:30-2:20PM at Smith Hall 304. Hosted by TA.
I will work with the TA to have the lab sessions via Zoom as well (link on Canvas).

***Textbooks/Lecture notes**:*
Oehlert, G., "A First Course in Design and Analysis of Experiments"
(free at http://users.stat.umn.edu/~gary/Book.html)
Lecture slides/labs will be posted on Canvas. Every Zoom lecture will be recorded on the Cloud.

Software:
We will use the statistical software environment R, which is freely available from
http://www.r-project.org
I highly recommend using R in combination with Rstudio:
https://www.rstudio.com/products/rstudio/download/

Useful R resources:
DataCamp's free R tutorial: *https://www.datacamp.com/courses/free-introduction-to-r*
R Cheatsheets for various packages/functions: *https://rstudio.com/resources/cheatsheets/*

Outline of course topics:
1. Experiments, test statistics, completely randomized designs, significance testing
2. Review of normal theory tests and confidence intervals, basic decision theory, power and sample size
3. Treatment effects model, ANOVA
4. Sums of Squares (SS) decomposition
5. Treatment comparisons, model diagnostics
6. Factorial treatment designs
7. ANOVA decomposition for the additive model
8. ANOVA for the interaction model, model comparison, and normal-theory testing
9. Complete and incomplete block designs, Latin square designs
10. Fractional Factorial designs, aliasing, confounding, resolution
11. Split-plot designs, different size experimental units, repeated measures examples

Lab sessions information:
The TA will go through some analysis using R and, time permitting, may go over previous homework or answer questions that you may have about the homework that is due the following week.

Materials and Attending Lectures (in-person and online):
This is hybrid course that will have lectures/labs in-person as well as through Zoom. Homework can be submitted in-person at Lab or online through Canvas. You will need to use your UW email address to attend each Zoom lecture/lab if you attend online.

Grading policy and exams:
Homework (45%): Weekly homework assignments. See HW Schedule.
Midterm (25%): Planned Wednesday, Nov 8 during class time (in-person exam)
Final Exam (30%): Planned Wed. Dec 13, take home final

Make-up exams will not be given except in extraordinary cases (certified medical condition, family emergency, etc). Midterm and Final Exams will be written such that they should take students no more than 50min and 2 hours to complete, respectively.

Grading Scale (may be modified):

		A (93+)	A- (90-92)	
	B+ (87-89)	B (83-86)	B- (80-82)	
	C+ (77-79)	C (73-76)	C- (70-72)	
	D+ (67-69)	D (63-66)	D- (60-62)	E (< 60)

Homework Schedule:
Each assignment is due at the beginning of the Friday lab session on the given day (submitted to the TA). If online: please upload one PDF document on Canvas under the appropriate assignment by 1:30PM Pacific Time on the given Friday.

HW 1 due Friday Oct 13
HW 2 due Friday Oct 20
HW 3 due Friday Oct 27
HW 4 due Friday Nov 3
HW 5 due Friday Nov 17
HW 6 due Friday Dec 1
HW 7 due Friday Dec 8

Holiday Schedule (no classes on these days):

Veteran's Day	Friday Nov 10
Thanksgiving	Thursday Nov 23
Native American Heritage	Friday Nov 24

Students with disabilities:
If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, 448 Schmitz (206) 543-8924 (V/TTY). If you have a letter from Disabled Student Services indicating you have a disability that requires academic accommodations, please present this letter to me so we can discuss the accommodations you might need for the class.

Religious Accommodations:
Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/).
Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (https://registrar.washington.edu/students/religiousaccommodations-request/)."

Student conduct:
Follow the UW Student Conduct Code in your interactions with your colleagues and me in this course by respecting the many social and cultural differences among us, which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status, and veteran status.